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10/553,841	02/23/2006	James Daily	CH-7671US	6317
157 7590 06/24/2009 BAYER MATERIAL SCIENCE LLC 100 BAYER ROAD PITTSBURGH, PA 15205				
EXAMINER KESSLER, CHRISTOPHER S				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
06/24/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/553,841

**Applicant(s)**

DAILY ET AL.

**Examiner**

CHRISTOPHER KESSLER

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Status of Claims***

1. Responsive to the amendment filed 5 March 2009, claims 1-18 are cancelled and claims 23 and 24 are added. Claims 19-24 are currently under examination.

***Status of Previous Rejections***

2. Responsive to the amendment filed 5 March 2009, the previous rejections are maintained. New grounds of rejection are presented for new claims 23 and 24, which correspond to the previous grounds of rejection for claims 12 and 13.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2001/0001401 A1 issued to Segal (hereinafter "Segal"), in view of US 5,868,876 issued to Bianco et al. (hereinafter "Bianco").

Regarding claim 23, the examiner notes that the claim is written in product-by-process format. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In the instant case, Segal does not teach the processing of the molybdenum powder or the consolidation of the billet, however, these steps are well known in the art, and do not materially affect the structure of the finished plate as claimed.

Segal teaches the invention substantially as claimed. Segal teaches a method of making a plate (see SUMMARY OF THE INVENTION). Segal teaches wherein the plate is made by thermally treating a workpiece and subjecting to thermo-mechanical forces in a first direction, then thermally treating the workpiece in a second direction different from the first direction (see paras. [0031]-[0039]). Segal teaches that the workpiece is then recrystallized in a heat treatment (see [0041]).

Segal does not teach wherein slicing or machining is a part of the process, however, it would have been obvious to one of ordinary skill in the art at time of invention to have cut or sliced or machined the product, in order to obtain the desired size and enable use of the product in particular applications. Slicing or machining is well known in the art such that it would have been obvious to one of ordinary skill in the

art upon reading Segal. For example Segal teaches in an example that the billet is cut into coupons in order to examine the structure (see [0045]).

Segal teaches wherein the method is applicable to make plate out of molybdenum materials (see SUMMARY OF THE INVENTION). Segal does not teach wherein the molybdenum metal contains an alloying element as claimed.

Bianco teaches a method of making a molybdenum billet. Bianco teaches that the billet is made by consolidation of molybdenum powders (see cols. 3-4). Bianco teaches that the molybdenum is alloyed with an oxide dispersion selected from a group consisting of lanthanum oxide (see cols. 3-4). Bianco teaches that after forming of the billet, the billet is worked by mechanical processes. Bianco teaches that this molybdenum maintains high strength and creep strength at elevated temperatures (see cols. 2-3).

It would have been obvious to one of ordinary skill in the art at time of invention to have practiced the invention of Segal using the billet of Bianco, because Bianco teaches that the molybdenum has high strength and creep strength at elevated temperatures (see cols. 2-3).

Regarding claim 19, Segal in view of Bianco is applied to the claim as stated above. Although Segal in view of Bianco does not teach what is the radial strength of the plate at 1600°C, this feature would have been inherent in the plate, because Bianco teaches that the material has high strength and creep strength at elevated temperature (see cols. 2-3). Further, the same material as claimed processed in the same way as

claimed would have the claimed properties. Applicant is further directed to MPEP 2112.01.

5. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 3,622,824 issued to Atlee (hereinafter "Atlee"), in view of Segal and Bianco.

Regarding claims 20 and 21, Atlee teaches an x-ray target comprising a molybdenum plate (see Figs. 1-4, cols. 1-2). Atlee teaches that the plate comprises a focal track and a stem which is attached to the plate (see Figs. 1-4, cols. 1-2). Atlee does not teach wherein the plate is a cross-directionally worked molybdenum having an alloying element as claimed, or wherein the plate has a radial strength of at least 60 ksi at 1600°C.

Segal teaches a method of making a plate (see SUMMARY OF THE INVENTION). Segal teaches wherein the plate is made by thermally treating a workpiece and subjecting to thermo-mechanical forces in a first direction, then thermally treating the workpiece in a second direction different from the first direction (see paras. [0031]-[0039]). Segal teaches that the workpiece is then recrystallized in a heat treatment (see [0041]). Segal teaches that this method produces a fine uniform structure and a strong, uniform texture (see SUMMARY OF THE INVENTION).

Segal does not teach wherein slicing or machining is a part of the process, however, it would have been obvious to one of ordinary skill in the art at time of invention to have cut or sliced or machined the product, in order to obtain the desired

size and enable use of the product in particular applications. Slicing or machining is well known in the art such that it would have been obvious to one of ordinary skill in the art upon reading Segal. For example Segal teaches in an example that the billet is cut into coupons in order to examine the structure (see [0045]).

Segal teaches wherein the method is applicable to make plate out of molybdenum materials (see SUMMARY OF THE INVENTION). Segal does not teach wherein the molybdenum metal contains an alloying element as claimed.

Bianco teaches a method of making a molybdenum billet. Bianco teaches that the billet is made by consolidation of molybdenum powders (see cols. 3-4). Bianco teaches that the molybdenum is alloyed with an oxide dispersion selected from a group consisting of lanthanum oxide (see cols. 3-4). Bianco teaches that after forming of the billet, the billet is worked by mechanical processes. Bianco teaches that this molybdenum maintains high strength and creep strength at elevated temperatures (see cols. 2-3).

Atlee in view of Segal and Bianco do not teach what is the radial strength of the plate at 1600°C, this feature would have been inherent in the plate. Bianco teaches that the material has high strength and creep strength at elevated temperature (see cols. 2-3). Further, the same material as claimed processed in the same way as claimed would have the claimed properties. Applicant is further directed to MPEP 2112.01.

It would have been obvious to one of ordinary skill in the art at time of invention to have made the x-ray target of Atlee by practicing the invention of Segal, because Segal teaches that this method produces a fine uniform structure and a strong, uniform

texture (see SUMMARY OF THE INVENTION), and to have used the billet of Bianco, because Bianco teaches that the molybdenum has high strength and creep strength at elevated temperatures (see cols. 2-3).

6. Claims 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 3,622,824 issued to Atlee (hereinafter "Atlee"), in view of US Patent 3,136,907 issued to Kieffer et al. (hereinafter "Kieffer"), US 2001/0001401 A1 issued to Segal (hereinafter "Segal"), and US 5,868,876 issued to Bianco et al. (hereinafter "Bianco").

Regarding claim 24, the examiner notes that the claim is written in product-by-process format. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Atlee teaches an x-ray target comprising a molybdenum plate (see Figs. 1-4, cols. 1-2). Atlee teaches that the plate comprises a focal track and a stem which is attached to the plate (see Figs. 1-4, cols. 1-2). Atlee does not teach wherein the plate is a cross-directionally worked molybdenum having an alloying element as claimed, or wherein the plate comprises a stem that is made by forging.



Kieffer teaches that an x-ray target is a plate made with an integral stem (see cols. 1-2, Figs. 1-2). Kieffer teaches that the stem is made by sintering a billet and then forging the billet into the desired shape (see cols. 1-2, Figs. 1-2). Kieffer teaches that this unitary construction of the plate and stem allows for increased loading (see cols. 1-2, Figs. 1-2).

Segal teaches a method of making a plate (see SUMMARY OF THE INVENTION). Segal teaches wherein the plate is made by thermally treating a workpiece and subjecting to thermo-mechanical forces in a first direction, then thermally treating the workpiece in a second direction different from the first direction (see paras. [0031]-[0039]). Segal teaches that the workpiece is then recrystallized in a heat treatment (see [0041]). Segal teaches that this method produces a fine uniform structure and a strong, uniform texture (see SUMMARY OF THE INVENTION).

Segal does not teach wherein slicing or machining is a part of the process, however, it would have been obvious to one of ordinary skill in the art at time of invention to have cut or sliced or machined the product, in order to obtain the desired size and enable use of the product in particular applications. Slicing or machining is well known in the art such that it would have been obvious to one of ordinary skill in the art upon reading Segal. For example Segal teaches in an example that the billet is cut into coupons in order to examine the structure (see [0045]).

Segal teaches wherein the method is applicable to make plate out of molybdenum materials (see SUMMARY OF THE INVENTION). Segal does not teach wherein the molybdenum metal contains an alloying element as claimed.

Bianco teaches a method of making a molybdenum billet. Bianco teaches that the billet is made by consolidation of molybdenum powders (see cols. 3-4). Bianco teaches that the molybdenum is alloyed with an oxide dispersion selected from a group consisting of lanthanum oxide (see cols. 3-4). Bianco teaches that after forming of the billet, the billet is worked by mechanical processes. Bianco teaches that this molybdenum maintains high strength and creep strength at elevated temperatures (see cols. 2-3).

It would have been obvious to one of ordinary skill in the art at time of invention to have made the x-ray target of Atlee by practicing the invention of Segal, because Segal teaches that this method produces a fine uniform structure and a strong, uniform texture (see SUMMARY OF THE INVENTION), and to have used the billet of Bianco, because Bianco teaches that the molybdenum has high strength and creep strength at elevated temperatures (see cols. 2-3), and to have used a forging method to produce an integral stem as taught by Kieffer, because Kieffer teaches that this unitary construction of the plate and stem allows for increased loading (see cols. 1-2, Figs. 1-2).

Regarding claim 22, Atlee in view of Kieffer, Segal and Bianco are applied to the claims as stated above. Atlee in view of Kieffer, Segal and Bianco do not teach what is the strength of the stem at 1600°C, this feature would have been inherent in the plate. Bianco teaches that the material has high strength and creep strength at elevated temperature (see cols. 2-3). Further, the same material as claimed processed in the same way as claimed would have the claimed properties. Applicant is further directed to MPEP 2112.01.

***Response to Arguments***

7. Applicant's arguments filed 5 March 2009 have been fully considered but they are not persuasive.

Applicant argues that the claimed properties would not have been present in the material because the prior art methods of processing are not similar to that of the instant invention. More specifically, applicant states in the remarks at page 7, "However, it must be noted that the thermal mechanical forces applied in the first and second thermal treatment steps of Applicants' inventive process, while in directions different from one another, ***are along the same axis.***" The examiner acknowledges the embodiment referred to by applicant. However, the features upon which applicant relies (i.e., applying mechanical forces in a first direction, and in a second direction ***along the same axis***) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In the instant specification, applicant describes that the cross-directionally worked plate can be made by working in a first direction, by "any thermomechanical treatment" and then thermomechanically working "in a second direction that is different from the first direction," by applying "any thermo-mechanical treatment" (see specification, pp. 6-7). There is no description in the specification or in the claims of the instant application that said first and second direction must be along the same axis, although the feature of the first and second direction being along the same axis is

present in the embodiments. If this is a necessary feature of applicant's invention, the examiner questions why it was not claimed, or explicitly described in the specification. instead, what is described is a first direction, and "a second direction that is different from the first direction" (see pp. 6-7), and indeed this is what is claimed in instant claim 23. Applicant is again directed to MPEP 2111.

Further, the examiner disagrees with applicant's characterization of Segal. More specifically, applicant states in the remarks at page 6,

Most notably, Segal describes a process wherein a metal workpiece is upset forged along one axis and is then rolled in multiple directions, which rolling directions are perpendicular to both one another and the axis of upset forging. (See, Segal, ¶ [0038]).

Segal does not describe that the rolling is perpendicular to the axis of forging, although this might be implied from the figures of Segal. Either way, as was stated in the prior rejection, the process of Segal would have included the same processing steps described in the instant application of a first thermomechanical treatment in a first direction and second thermo-mechanical treatment in a second direction that is different from the first direction. As pointed out by applicant, Segal describes warm rolling in two or four "mutually perpendicular directions" (see [0038]). One of ordinary skill in the art would understand [0038] in Segal to describe a cross-rolling process which would result in a cross-directionally worked plate. These rolling steps alone meet the limitations of the claims, and also would meet the unclaimed limitation of the two directions being along the same axis.

Still further, applicant has not provided evidence that the method disclosed by Segal would not have produced a plate inherently containing the claimed properties, only argument.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **CHRISTOPHER KESSLER** whose telephone number is (571)272-6510. The examiner can normally be reached on Mon-Fri, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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